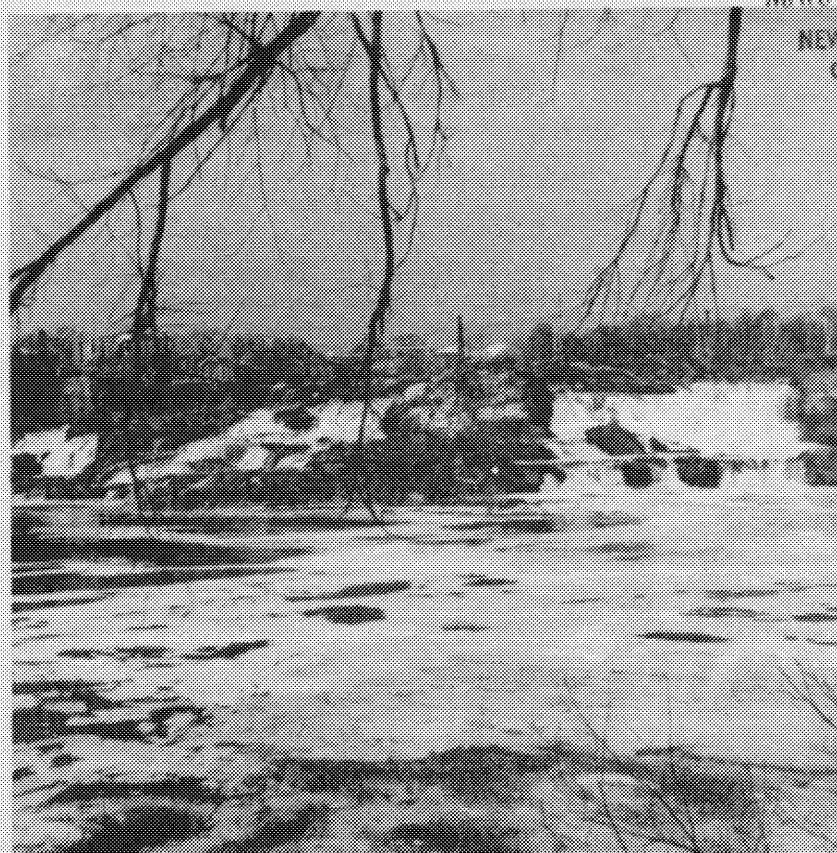


FLOOD PLAIN INFORMATION ANDROSCOGGIN RIVER AUBURN & LEWISTON

MAINE

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FLOOD PLAIN
MANAGEMENT SERVICES
NEW ENGLAND DIVISION
CORPS OF ENGINEERS



PREPARED FOR
THE CITIES OF AUBURN AND LEWISTON
BY
DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.
JULY 1969

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- I. Flood Plain Zoning Ordinance, Auburn, Maine
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INTRODUCTION

This report presents data relative to flood conditions of the Androscoggin River in the municipalities of Auburn and Lewiston, Maine. It is prepared at the request of the Auburn and Lewiston Planning Boards as an aid in management of local flood problems, as well as utilization of land areas subject to flooding. The report is based upon historical records of floods, frequency and size of floods, and basic field and topographical data developed to analyze flood levels.

The report shows flood levels which occurred during the 1936 flood, and those floods designated as the Intermediate Regional Flood and the Standard Project Flood. The Intermediate Regional Flood (I.R.F.) is a flood which has a frequency of occurring once in 100 years, or has a 1% chance of occurrence in any one year and could occur twice in the same year. Flood frequency has been determined from analysis of known floods on this watershed and are based on comparison with other similar rivers in the region. The Standard Project Flood (S.P.F.) is considerably larger in magnitude than has ever occurred in past records, but is a useful tool to be considered in flood plain planning activities.

Therefore, persons interested in control of development on flood plains should concern themselves with past flood levels and with future floods as designated by the Intermediate Regional Flood and Standard Project Flood.

Maps, profiles and cross-sections showing the extent of flooding in past floods and probable future floods are included in this report to aid in determining the depth of water at any location along the channel under study. With this information, protective measures can be taken by owners of existing structures in the flood plain, and proposed future development may be planned to either avoid flood damage or flood prevention measures may be incorporated in the structure.

The scope of this report is such that solutions to flooding are not included, but rather that data incorporated herein provide a basis for further studies and planning on the part of the Cities of Auburn and Lewiston in arriving at solutions to minimize the effects of flooding. Therefore, local planning programs should be studied which would control the usage made within a flood plain through zoning or subdivision regulations, the construction of flood protection works, or a combination of the two.

This report was prepared by Wright, Pierce, Barnes and Wyman, Engineers, Topsham, Maine, under the direction of the New England Division, Corps of Engineers, located in Waltham, Massachusetts. Representatives from the Corps of Engineers will, upon request of State and local governmental agencies, provide technical assistance in the interpretation and use of the information contained herein and provide other available flood data related thereto.

SUMMARY OF FLOOD SITUATION

Auburn and Lewiston, Maine are located approximately 30 miles north of Portland, Maine, and 30 miles southwest of Augusta, Maine, both having a common bond in that each borders the Androscoggin River and each are susceptible to ravages of severe floods. This report presents data from the Maine Turnpike bridge crossing upstream to Gulf Island Dam, or approximately 6.8 miles along the Androscoggin River. (See plate 1)

As with many Maine communities, business districts, industries, and the older residences are located near the river banks. The flood plain areas may in the future be prime targets for urban renewal projects.

An official United States Geological Survey (U.S.G.S.) gaging station has been established on the Androscoggin River since October of 1928. This station is located on the southwest bank of the river, 1 1/2 miles downstream from the Little Androscoggin River and 2 miles downstream from North Bridge. The land area drained at this point is 3,257 square miles.

One of the largest periods of records on the river is at

Rumford, Maine, where flow data has been tabulated since 1892.

Historical notes and records of floods extend back to February of 1723, with the earlier settling of the Colonies. The following paragraphs summarize significant findings relative to known flooding of this river.

THE GREATEST FLOOD on the Androscoggin River, at least since 1892 and possibly since the colonization of the Western Hemisphere, was the flood of March 1936, with a flow of 135,000 cubic feet per second (c.f.s.), occurring at the U.S. Geological Survey gaging station in Auburn.

ANOTHER GREAT FLOOD occurred in recent years during March of 1953, when the river flow was 95,800 c.f.s. at the Auburn U.S. Geological Survey gaging station, and the flood crest was 4 1/2 feet lower than the 1936 flood.

OTHER FLOODS on the river since systematic records have been maintained, in order of magnitude, are: March 1896; April 4, 1951; November 9, 1963; October 26, 1959; and April 22, 1950. Except for the 1896 flood, the others were not of a disastrous nature.

THE INTERMEDIATE REGIONAL FLOOD on the Androscoggin River is that which has an average frequency of occurrence in the

order of once in 100 years, or each year it has a 1% chance of occurring. It is conceivable that floods of this magnitude could occur more than once in the same year. Analysis of floods on this river and other rivers in the same general area, determines this frequency of occurrence. The magnitude of the Intermediate Regional Flood has been computed to be between the flood of 1936 and the flood of 1953.

THE STANDARD PROJECT FLOOD has a possibility of occurring in any year, but is one which has not occurred since early colonization, or since records have been maintained. This flood would be 30% greater in magnitude than the 1936 flood and would be 5 to 6 feet higher generally. It is a rare flood, but should be considered for planning for use in the flood plain.

FLOOD DAMAGES would result from recurrences of known floods. Additional damages would result from floods in the magnitude of the Standard Project Flood. Damage of present housing, industry and businesses in the flood zone would be of grave concern in the event of this major flood.

THE MAIN FLOOD SEASON on the Androscoggin River occurs in the Spring when heavy snowmelt and rains cause considerable

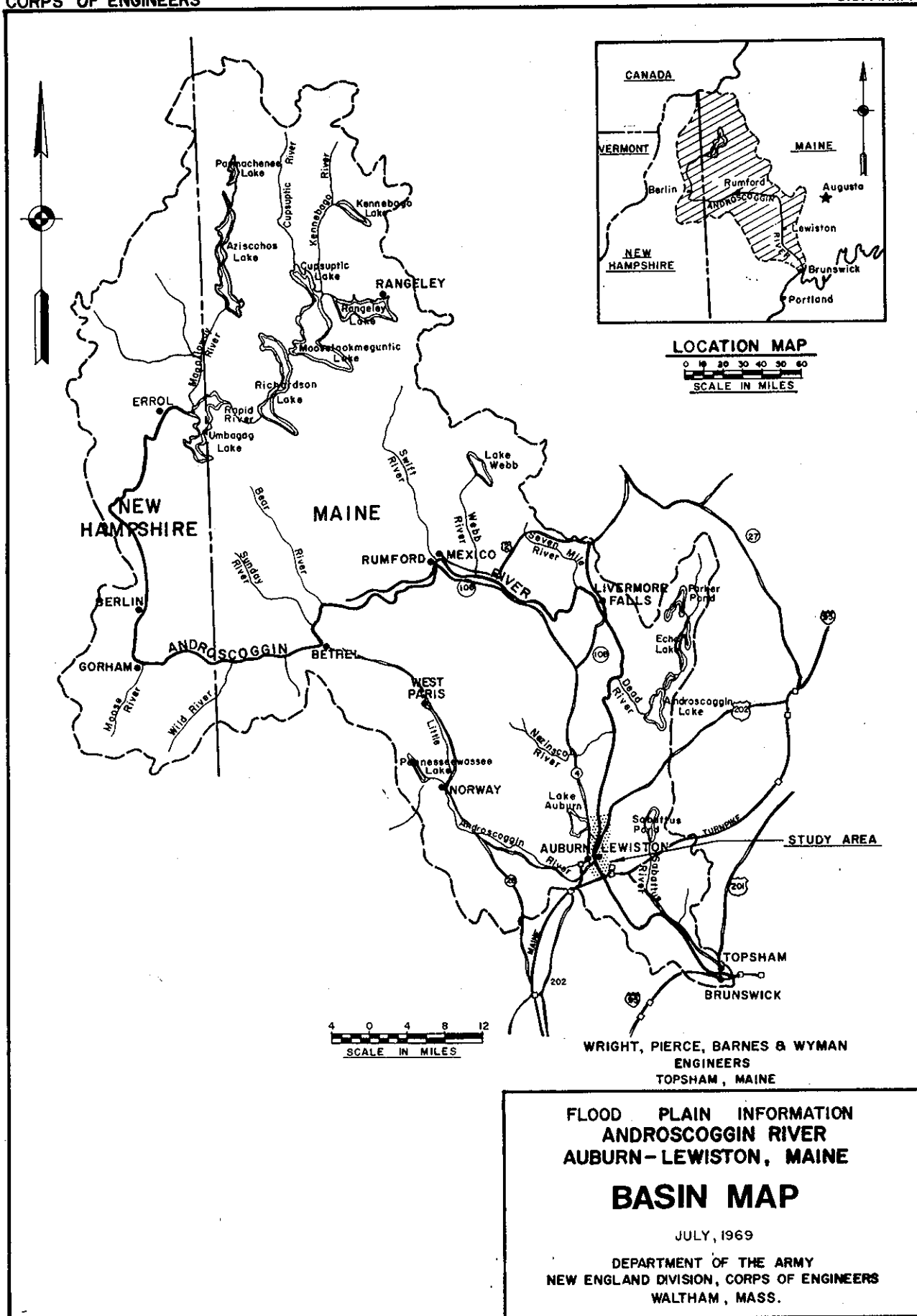
runoff. However, the fall season can bring floods from hurricanes and tropical storms, generally being lower in magnitude than the spring floods. Ice is a major hazard during the spring floods, causing even higher flooding if ice jams occur, as well as being a major threat to bridge crossings and other structures.

FLOOD DAMAGE PREVENTION MEASURES. There are no existing, authorized or proposed flood control or related measures on the Androscoggin River. Under the authority of Chapter 90A (Zoning Enabling Acts) of the State of Maine Revised Statutes of 1954 as amended in 1957, the City of Auburn has included Flood Plain Zoning in the Zoning Ordinance (Chapter 29 of the City Ordinance). A portion of Section 4 Chapter 29 is attached as Exhibit I. The Governor of Maine in an Executive Order dated 4 March 1968 ordered that no State funds be expended in the development of facilities until the flood hazard risk has been identified and further ordered "the heads of Executive agencies, departments, commissions, shall provide leadership in encouraging a broad and unified effort to prevent the uneconomic uses and development of the States' flood plains. . . ." (Exhibit II)

FUTURE FLOOD HEIGHTS which would result from the Standard Project Flood and the Intermediate Regional Flood are compared at the South Bridge and at the North Bridge in Table I.

TABLE I
RELATIVE FLOOD HEIGHTS

<u>FLOOD</u>	ESTIMATED PEAK DISCHARGE CFS @ U.S.G.S. GAGE	ABOVE 1953 FLOOD FEET	
		<u>SOUTH BRIDGE</u>	<u>NORTH BRIDGE</u>
March 1953	95,800	0	0
Intermediate Regional Flood	122,000	+2.82	+2.44
March 1936	135,000	+4.50	+4.50
Standard Project Flood	175,000	+9.42	+9.60



PAST AND FUTURE CONSIDERATIONS

This section of the report presents descriptive commentary on past and future flooding conditions which should be considered when planning for flood damage prevention.

In this planning, responsible parties should familiarize themselves with present development activity in the flood plain, as well as with the river and its characteristics, particularly relating to past flood conditions.

The Communities

The City of Lewiston was first settled in 1770 and incorporated as a town in 1795. Across the Androscoggin River the City of Auburn was settled in 1786 and incorporated as a town in 1842. Both communities grew rapidly after the Civil War; Auburn's principal industry being shoe manufacturing, and Lewiston's being the textile industry.

The population of Auburn according to the 1960 census was 24,449, and Lewiston's was 40,804.

Both municipalities now have highly diversified industries, although textile processing remains a principal

industry in Lewiston. Presently, new construction along the flood plains is a rarity both industry and private or public housing.

Flood Warning and Forecasting Services

Flood warning to both communities is carried out by the Androscoggin County Civil Defense and Public Safety Commission. Warnings are based on predictions from the Union Water Power Company, an electrical utility which has intimate knowledge of the river system. The U. S. Weather Bureau Flood Forecasting Center in Windsor Lock, Connecticut, also issues bulletins to this County agency. Both the forecasting and warning service have been highly developed.

River Characteristics

We are concerned with only a minor portion of the Androscoggin River Valley, but it is located at a critical point where some 3,257 square miles of land is drained. The Little Androscoggin River with a drainage area of 350 square miles intersects the Androscoggin just upstream from the South Bridge. The drainage basin of the Androscoggin is approximately 90 miles in length from Auburn-Lewiston to the Maine-Canadian border, and up to 60 miles in width. Therefore, the observer should keep in mind that a large storm is required

to create flood conditions; localized storms in such a large drainage area will be absorbed with little effect upon river flow. Elevations in this drainage basin vary from 6000 feet in the White Mountain area to about 120 feet in the Auburn-Lewiston area.

Bridges in the Study Area

Four bridges have presently been constructed in the study area, with another highway bridge to be constructed in the near future between Auburn and Lewiston. Bridges are shown in Figures 1 and 2. Pertinent elevations for these bridges and their relationship to the Intermediate Regional Flood and Standard Project Flood are tabulated in Table II.

The railroad bridge of the Grand Trunk Railroad between North and South Bridges causes restriction to the flood flow, as does the North Bridge. During a major flood and with ice floes packed against bridge abutments, piers and superstructures, all bridges could have further flooding above that predicted. This appears to have happened during the March 1936 flood.

The South Bridge in the 1936 flood was swept away and replaced by a high arched structure which should pass floods,

TABLE II

BRIDGES ACROSS THE ANDROSCOGGIN RIVER IN AUBURN-LEWISTON

<u>STATION</u>	<u>IDENTIFICATION</u>	<u>STREAM BED ELEV.</u> feet, m.s.l.	<u>BRIDGE ELEV. LOW STEEL</u> feet, m.s.l.	<u>FLOOD CRESTS</u>		<u>UNDERCLEARANCE RELATION TO IRF</u>	
				<u>IRF</u> feet m.s.l.	<u>SPF</u> feet m.s.l.	<u>BELOW</u> feet	<u>ABOVE</u> feet
-13- 30.1	South Bridge	9.70	139.0	137.7	144.4		1.3
30.3	Grand Trunk Railroad Bridge	112.4	139.5	139.2	146.5		0.3
30.6	North Bridge (Route 202)	106.7	137.2	141.9	150.4	4.7	
31.0	Maine Central Railroad Bridge	151.0	177.5	176.9	180.2		0.6

except those approaching the Standard Project Flood, with no adverse effects. Nearly all bridges cannot be used during extreme floods because approach roadways are inundated.

Dams on the Androscoggin River

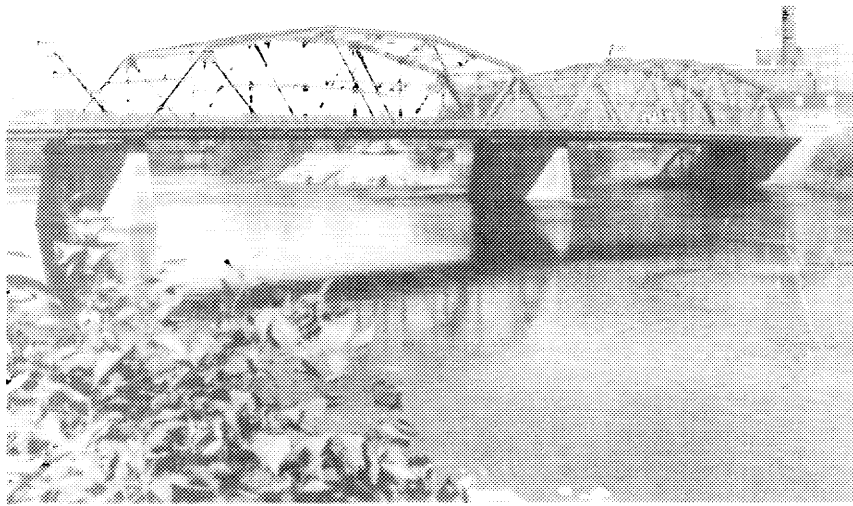
The two dams of practical interest in this report are the Union Water Power Company Dam at Milepoint 30.8 and Deer Rips Dam at Milepoint 33.6. Views of these dams are shown on Figure 3. Table III indicates pertinent elevations for these dams showing the relation between the Intermediate Regional Flood and the Standard Project Flood.

Union Water Power Company Dam is a series of structures built on natural ledge barriers. Plate No. 3 shows this structure and the canals and powerhouses built to supply water and power to industry in Lewiston. The dam is approximately 870 feet in length and builds up a substantial head at major flood flows because of poor approach conditions. The Deer Rips Dam is a relatively high concrete structure which passes major flood flows with relatively small head buildup because of a high velocity of approach. The dam length is 1140 feet considering overflow at its substructure.

TABLE III

DAMS ON THE ANDROSCOGGIN
IN AUBURN-LEWISTON AREA

<u>Milepoint</u>	<u>Identification</u>	<u>Crest</u>	<u>I.R.F.</u>	<u>S.P.F.</u>	<u>DEPTH OVER</u>	
		<u>Elevation</u>	<u>Crest</u>	<u>Crest</u>	<u>DAM</u>	
		feet	feet	feet	<u>I.R.F.-S.P.F.</u>	
		m.s.l.	m.s.l.	m.s.l.	feet	
30.8	Union Water Power	164.3	176.9	180.2	12.6	15.9
30.6	Deer Rips	201.6	209.8	211.9	8.2	10.3



SOUTH BRIDGE LOOKING UPSTREAM



NORTH BRIDGE LOOKING UPSTREAM

FIGURE 1



GRAND TRUNK RAILROAD BRIDGE
LOOKING UPSTREAM



MAINE CENTRAL RAILROAD BRIDGE
LOOKING UPSTREAM

FIGURE 2



UNION WATER POWER COMPANY DAM



DEER RIPS DAM

FIGURE 3

PAST FLOODS

Flood Records

Desirable records extend as far back as 1928 on this particular reach of the river, since establishment of the U. S. Geological Survey gaging station in Auburn. However, Union Water Power Company has maintained staff gage readings at its dam prior to the 1900's from which additional information can be constructed. The greatest river discharges on record have occurred since establishment of the above mentioned gaging station.

Flood Stages and Discharges

Table IV lists crest stages and discharges for the ten highest floods in order of the magnitude at the U. S. Geological Survey gaging station.

TABLE IV

THE KNOWN TEN HIGHEST FLOODS IN ORDER OF MAGNITUDE
UNITED STATES GEOLOGICAL SURVEY GAGE STATION 1-0590

<u>Order</u> <u>No.</u>	<u>Date of</u> <u>Crest</u>	<u>Stage</u> feet	<u>Elevation</u> feet, m.s.l.	<u>Estimated</u> <u>Peak</u> <u>Discharge</u> c.f.s.
1	March 20, 1936	27.57	136.75	135,000
2	March 28, 1953	22.84	132.02	95,800
3	March -, 1896	17.75	126.93	65,000
4	April 4, 1951	15.26	124.44	52,900
5	November 9, 1963	15.21	124.39	52,600
6	October 26, 1959	14.90	124.08	51,500
7	April 22, 1950	14.76	123.94	50,800
8	September 12, 1954	14.50	123.68	49,600
9	April 24, 1958	13.87	123.05	46,700
10	May 4, 1940	13.77	122.95	46,300

FLOOD DESCRIPTION

Following are descriptions of known large floods which have occurred on the Androscoggin in the Auburn-Lewiston area.

October 22, 1785

In the early history of colonization, this was probably the greatest flood which occurred. Lapham's History of Bethel, Maine states that the river rose 25 feet above normal in that town, and investigations during 1936 indicate that the stage during the 1785 storm was 1.5 feet above the 1936 crest at Bethel. Log jams may have affected the stage of this 1785 flood, however.

March 1896

Prior to March of 1936, this appears to have been the most destructive flood which occurred during the first week of March. As in the 1936 flood, melting snow and rain combined to produce an estimated flow of 65,000 c.f.s. at Lewiston. Both the North and South Bridges were carried out, as well as a railroad bridge.

March 30, 1936

This has been the greatest flood in the known history of

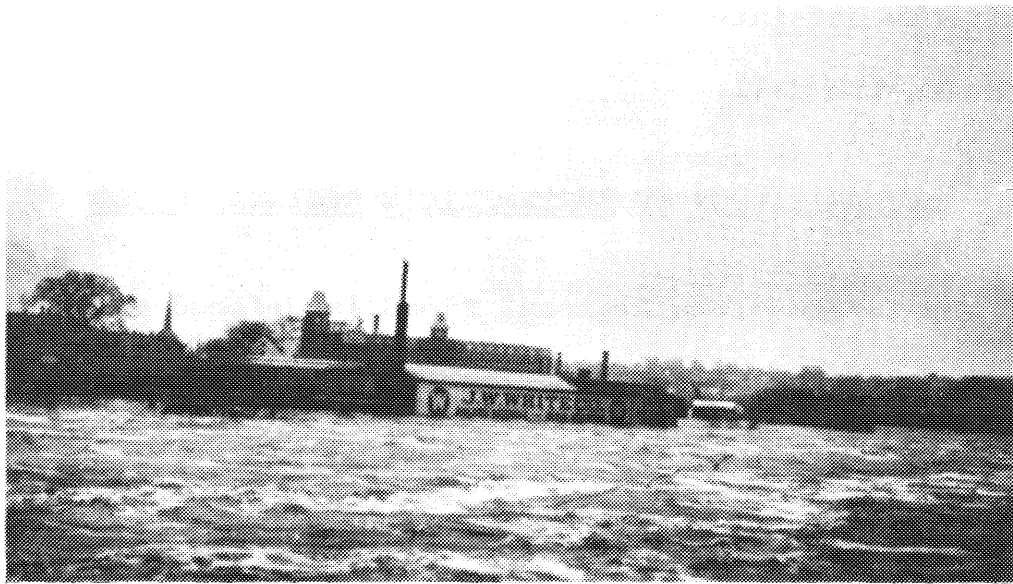
the valley. An ice jam below Livermore Falls caused a heavy surge of water when it broke. Water level elevation at the U.S. Geological Survey gage was estimated at 136.8 feet above Mean Sea Level when the peak discharge of 135,000 c.f.s. passed. The South Bridge between Auburn and Lewiston was swept away in the flood, and buildings in both cities were toppled and were washed away.

March 28, 1953

This flood produced a flow of 95,800 c.f.s. at the U.S. Geological Survey gage and the water level measured 132.02 feet above Mean Sea Level, nearly 5 feet less than the 1936 flood. The flow at the Union Water Power Company dam was 79,300 c.f.s. compared with 118,000 c.f.s. during the 1936 flood. Figure 4 shows two photographs that were taken during the 1953 flood.



Androscoggin River, Auburn, Me.-
Right bank, looking downstream
from North Bridge, March 28, 1953.



Androscoggin River, Lewiston, Me.-
Left bank looking downstream from
North Bridge, March 28, 1953.

FUTURE FLOODS

Discussed within this section of the report are the Standard Project Flood and the Intermediate Regional Flood and the hazards which would result from these great floods. A flood in magnitude of the Standard Project Flood can reasonably be expected, and the Intermediate Regional Flood has a chance of occurring more frequently but resulting in less damaging effects.

It is expected that large floods would occur in the early spring with heavy snowmelt coupled with intense rain, although hurricanes and intense tropical storms could produce disastrous floods in the fall.

DETERMINATION OF INTERMEDIATE REGIONAL FLOOD

The Intermediate Regional Flood is defined as one having an average frequency of occurrence of once in 100 years at a particular location. Because the flood may occur in any year, the Intermediate Regional Flood may be described as a flood with a 1% chance of occurring in any year.

The Intermediate Regional Flood was determined at the U.S. Geological Survey gage and the North Bridge by statistical analysis of past flood data relating these to other rivers of

similar nature to develop synthetic long term records at these locations.

Results of these analyses indicate that the Intermediate Regional Flood would be of the magnitude of 122,000 c.f.s. at the U.S. Geological Survey gaging station and 108,000 c.f.s. at the Route 202 bridge (North Bridge). This flood is 2 feet lower in general than the 1936 flood.

DETERMINATION OF STANDARD PROJECT FLOOD

A flood of a magnitude that would be produced under the most severe hydrologic and meteorologic conditions which are considered reasonably characteristic of happening in this basin is considered to be the Standard Project Flood. The Corps of Engineers, in cooperation with the U. S. Weather Bureau, has initiated comprehensive studies based on vast records of floods and storms to estimate flood potentials for rivers, and these procedures have been used to project the Standard Project Flood for the Androscoggin River.

The Standard Project Flood for the Androscoggin at the U.S. Geological Survey gaging station is estimated to be 175,000 c.f.s. or approximately 30% greater than the 1936 flood. At North Bridge the flood flow is projected to be 155,000 c.f.s.

Frequency

It is not practical to assign a frequency to the Standard Project Flood. The occurrence of such a flood would be a rare event; however, it could occur in any year.

Possible Larger Floods

Floods larger than the Standard Project Flood are possible, however, the combination of factors that would be necessary to produce such floods would seldom occur. For this reason, floods of this magnitude have not been considered in this report.

HAZARDS OF GREAT FLOODS

The hazards of great floods are the loss of life and property. With adequate warning, loss of life should not occur unless a major catastrophe happens, such as the breaching of a dam. Property in the flood plain, especially real estate, bridges and dams are subject to inundation, undermining and washout. The seriousness of the situation depends upon water velocity and the depth of water on the flood plain.

Flood Areas, Flood Profiles and Cross Sections

The approximate areas along the Androscoggin River that would be inundated during the floods studied are shown on Plates 3, 5 and 6. Overflow areas are drawn for the Intermediate Regional and Standard Project Floods. The flood of March 1936 covered approximately the same area as the Intermediate Regional Flood. The actual limits of flooding on the ground may vary from those shown on the maps since the 10 foot contour intervals and relatively small map scale do not permit precise plotting.

High water profiles of the two study floods are shown on Plates 4, 5 and 7. These profiles may be used to determine the depth of flooding at a particular location by standard survey methods. Crest and deck elevations for the dams and

bridges, respectively, are indicated on the profiles.

Plate 8 shows four cross sections that are typical of the many sections taken across the Androscoggin River for this study. The locations of these cross sections are shown on Plates 3, 5 and 6. The elevation and extent of overflow of the Intermediate Regional Flood, March 1936 flood, and Standard Project Flood are indicated on these sections.

Water Surface

Elevation of the floods illustrated were computed by using existing flood records, topographic maps of the area, and cross sections of the river valley surveyed in June through October of 1968. The overflow areas and elevations shown on Plates 3, 5 and 6 have been determined with an accuracy consistent with the purposes of this study and the accuracy of the basic data.

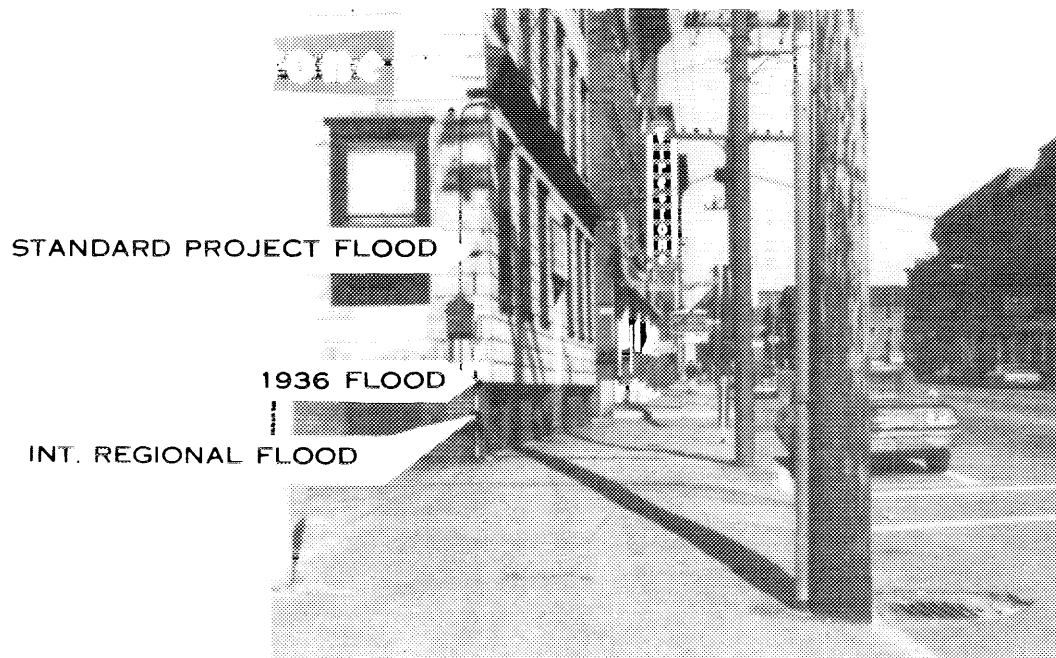
Although bridges collect debris and ice during floods and may be washed away, it was assumed that collection of debris and ice would be minimal and that all bridges would stand in all computations determining flood levels.

No allowances have been made for ice jams which may occur either above or below the study area, causing greater depths of flooding to occur.

Figures 5 through 8 show the heights that would be reached by the various study floods and the actual high water elevation of the March 1936 flood on buildings now constructed within the flood plain.

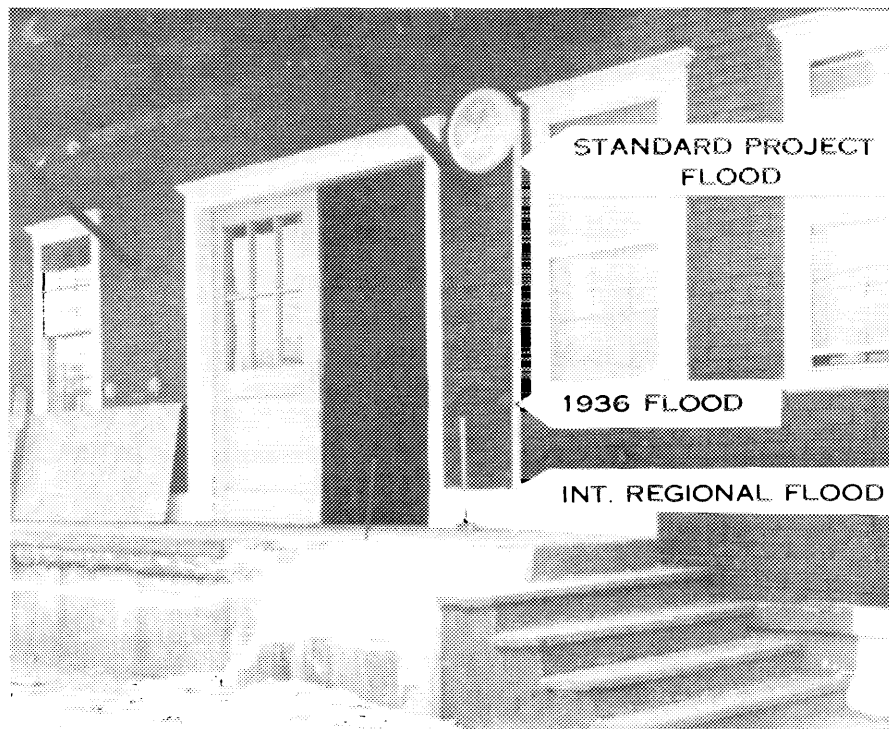


1936 FLOOD



FLOOD HEIGHT ON MAIN STREET, AUBURN
LOOKING TOWARD COURT STREET

FIGURE 5



Androscoggin River, Auburn, Me.,
Stearns Packing Co., formerly
Auburn Packing Co., showing
relative flood heights at loading
platform.

FIGURE 6

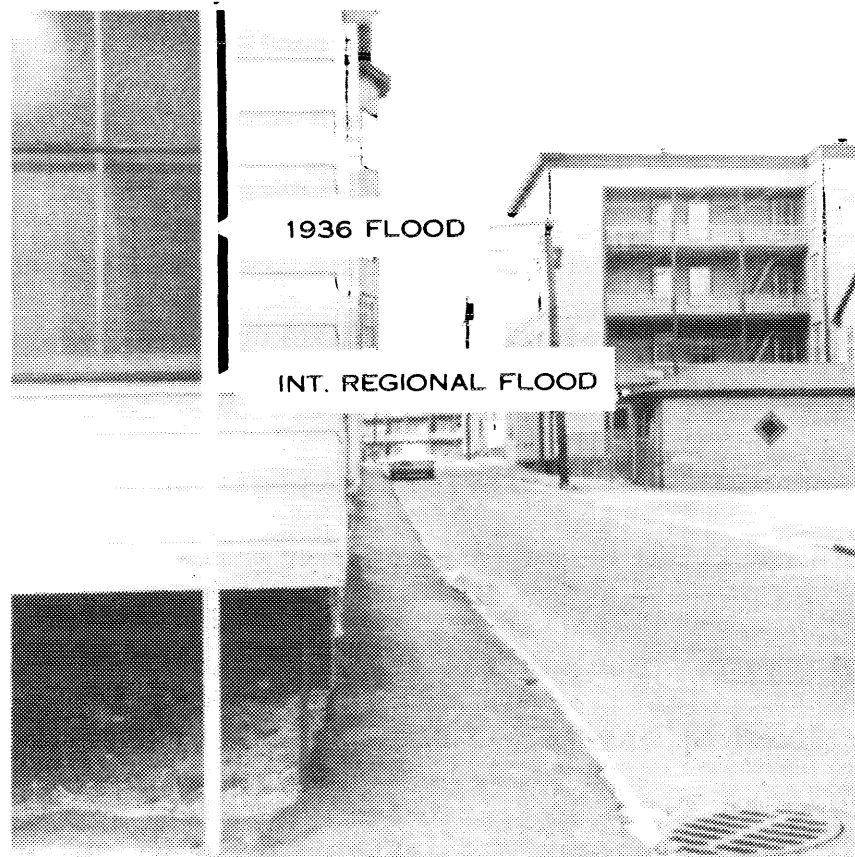


1936 FLOOD



FLOOD HEIGHT AT CORNER OF
RIVER AND CEDAR STREETS, LEWISTON

FIGURE 7



RELATIVE FLOOD HEIGHTS
at #71 River St., Lewiston.
S.P.F. would be 4.8 feet
above 1936 flood height.

FIGURE 8

GLOSSARY OF TERMS

FLOOD: A great deluge of water which covers land areas used or usable by man. Floods are usually characterized as temporarily covering land areas which are adjacent to a body of water such as an ocean, lake, stream or river.

Adverse affects may include loss of life and property through overflow of the land, backup of sewers and storm drains, thereby creating unsanitary conditions, loss of bridges, roadways and public utilities, and deposition of debris and mud on the overflow areas, to mention a few.

FLOOD CREST: The maximum stage or elevation reached by waters of a flood at any location.

FLOOD PEAK: The maximum instantaneous discharge of a flood at a given location, usually occurring at the flood crest.

FLOOD PLAIN: The relatively flat area or low lands adjoining the channel of a river, stream or watercourse or ocean, lake, or other body of standing water, which has been or may be covered by flood water.

FLOOD PROFILE: A graph showing the relationship of water surface elevation to location, the latter generally expressed as

distance above mouth of a stream of water flowing in an open channel. It is generally drawn to show surface elevation for the crest of a specific flood, but may be prepared for conditions at a given time or stage.

FLOOD STAGE: The stage or elevation at which overflow of the natural banks of a stream or body of water begins in the reach or area in which the elevation is measured.

HEAD LOSS: The effect of obstructions, such as narrow bridge openings or buildings that limit the area through which water must flow, raising the surface of the water upstream from the obstruction.

INTERMEDIATE REGIONAL FLOOD: A flood having an average frequency of occurrence in the order of once in 100 years although the flood may occur in any year. It is based on statistical analyses of streamflow records available for the watershed and analyses of rainfall and runoff characteristics in the "general region of the watershed".

LEFT BANK: The bank on the left side of a river, stream or watercourse, looking downstream.

LOW STEEL (OR UNDERCLEARANCE): See "underclearance".

RIGHT BANK: The bank on the right side of a river, stream, or watercourse, looking downstream.

STANDARD PROJECT FLOOD: The flood that may be expected from the more severe combination of meteorological and hydrological conditions that are considered reasonably characteristic of the geographical area in which the drainage basin is located, excluding extremely rare combinations. Peak discharges for these floods are generally about 40% to 60% of the Probable Maximum Floods for the same basins. Such floods, as used by the Corps of Engineers, are intended as practicable expressions of the degree of protection that should be sought in the design of flood control works, the failure of which might be disastrous.

UNDERCLEARANCE: The lowest point of a bridge or other structure over or across a river, stream, or watercourse that limits the opening through which water flows. This is referred to as "low steel" in some regions.

MILEPOINT: All distances are measured from Brick Island, Merrymeeting Bay, in order that floods may be conveniently compared to previous records.

AUTHORITY, ACKNOWLEDGEMENTS, AND AVAILABLE ASSISTANCE

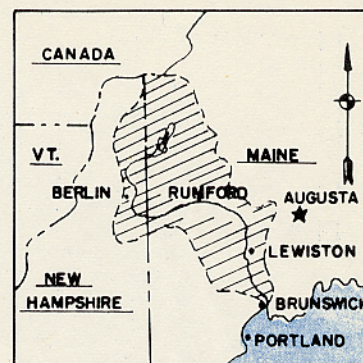
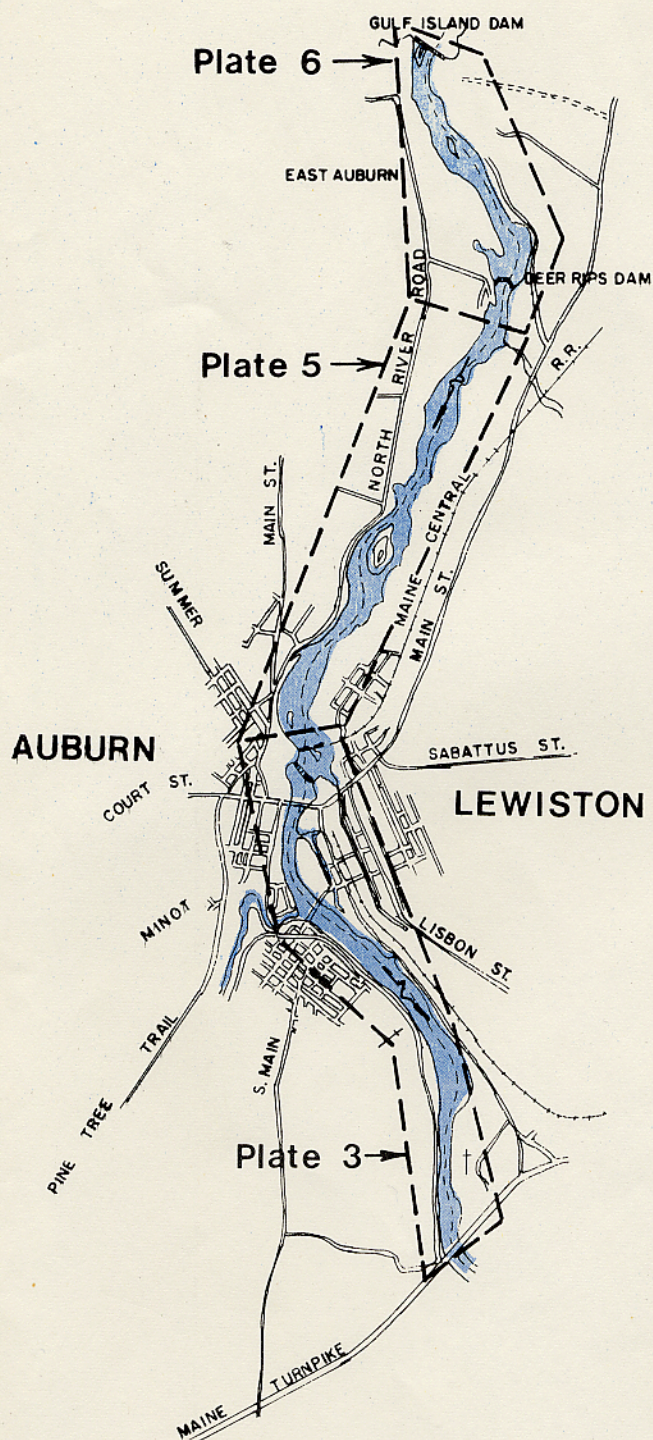
This report has been prepared in accordance with authority granted under Section 206 of the Flood Control Act of 1960 (PL86-645), as amended.

* * *

The assistance and cooperation of the following agencies and public utilities are hereby acknowledged and appreciated: The U. S. Geological Survey, the Union Water Power Company, the Cities of Lewiston and Auburn, and the Maine State Highway Department.

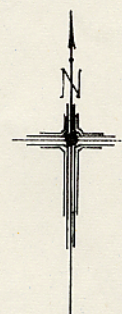
* * *

This report presents flood conditions of the Androscoggin River for the Cities of Auburn and Lewiston, Maine. The New England Division of the Corps of Engineers will provide technical assistance in the application of data presented within the report.



Location Map

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SCALE IN MILES



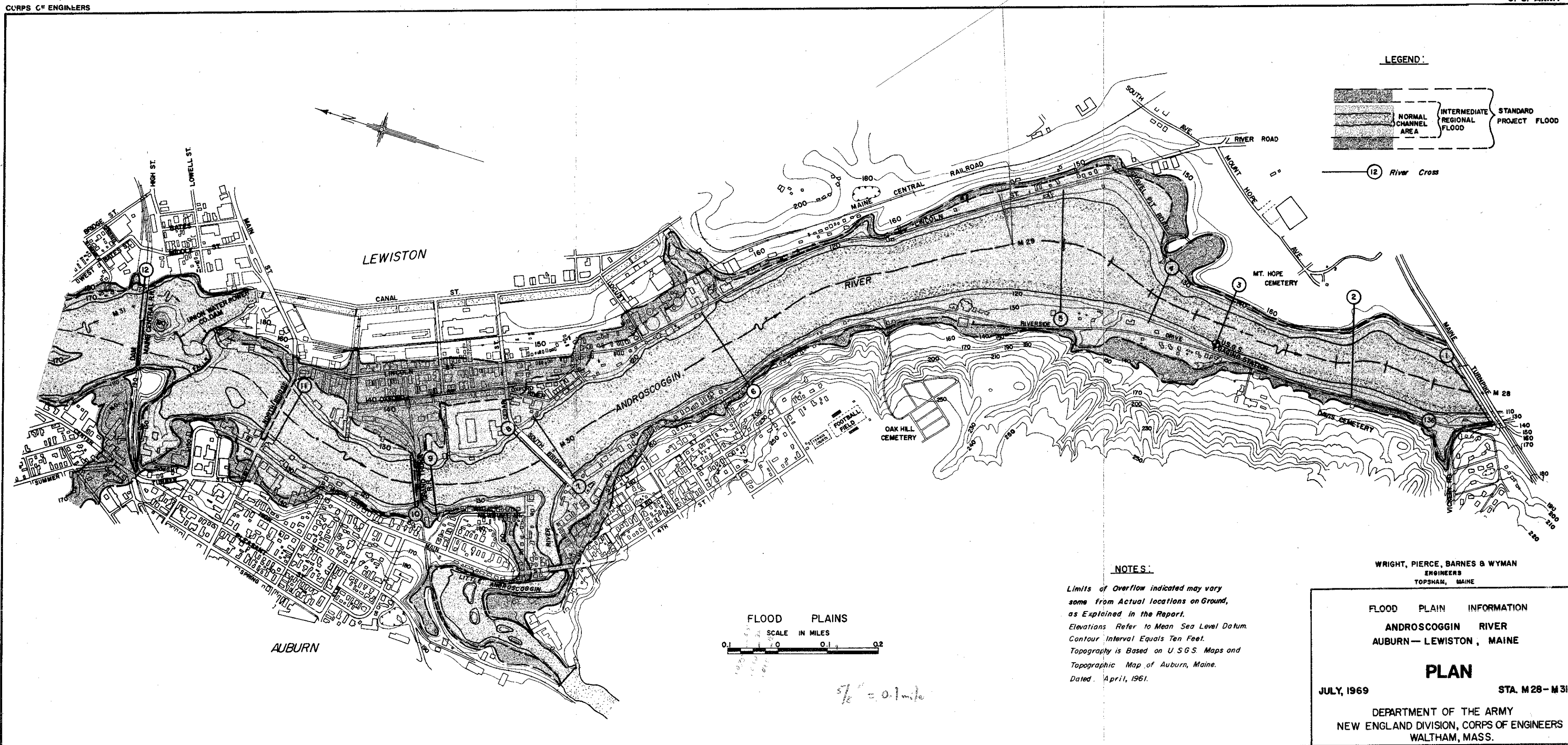
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SCALE IN FEET

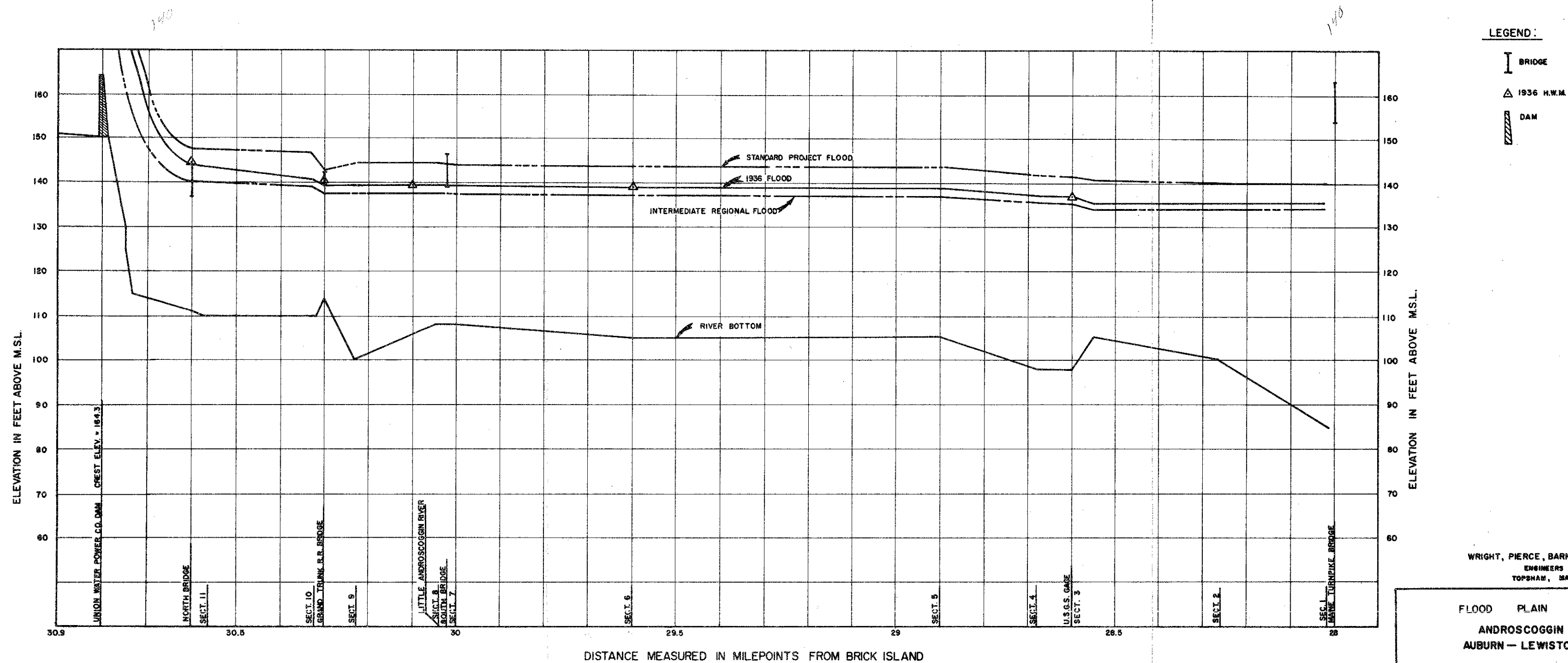
WRIGHT, PIERCE, BARNES & WYMAN
ENGINEERS
TOPSHAM, MAINE

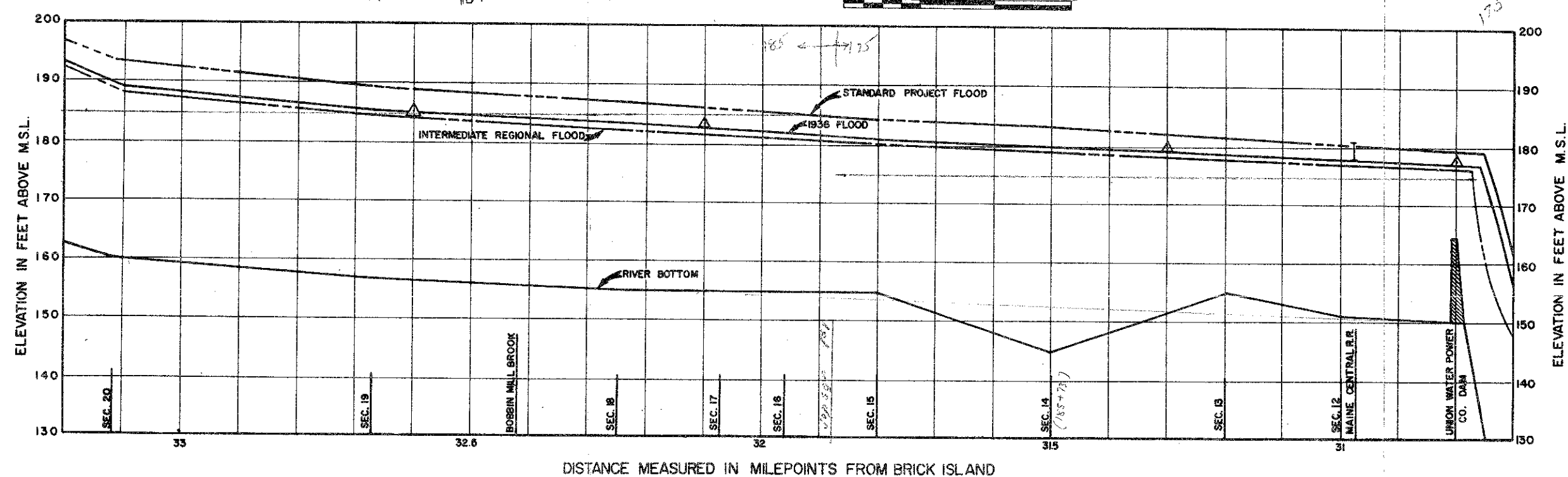
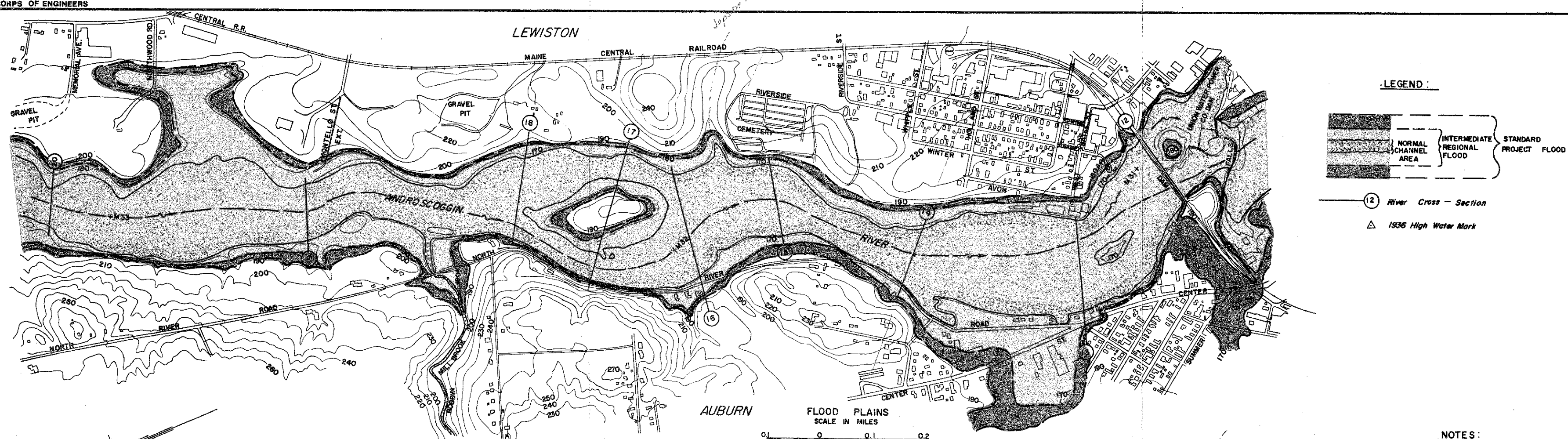
FLOOD PLAIN INFORMATION
ANDROSCOGGIN RIVER
AUBURN — LEWISTON, MAINE
INDEX MAP

JULY, 1969

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.





**NOTES:**

Limits of Overflow indicated may vary some from Actual locations on Ground, as Explained in the Report.
Elevations Refer to Mean Sea Level Datum.
Contour Interval Equals Ten Feet.
Topography is Based on U.S.G.S. Maps and Topographic Map of Auburn, Maine.
Dated: April, 1961.

WRIGHT, PIERCE, BARNES & WYMAN
ENGINEERS
TOPSHAM, MAINE

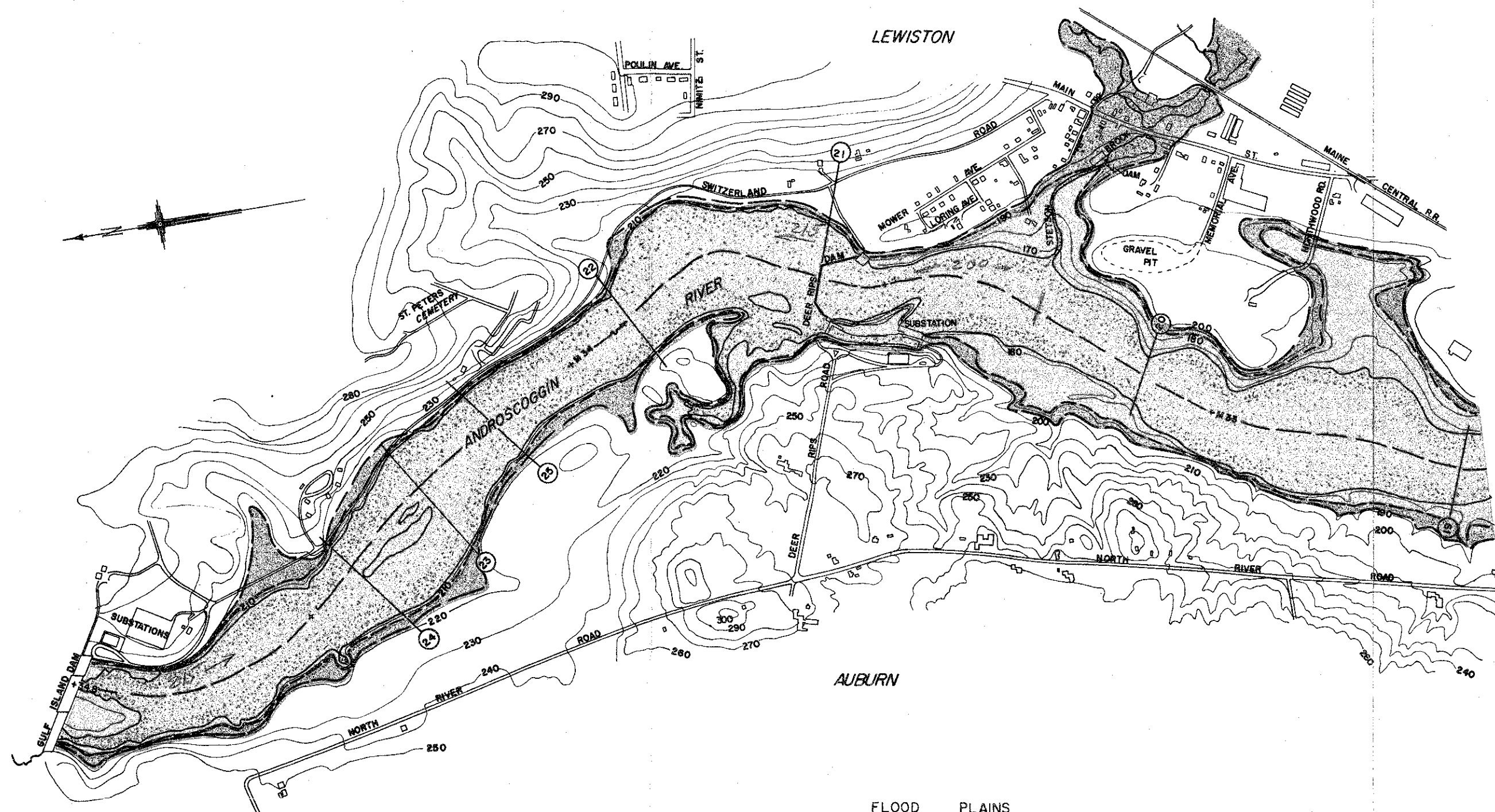
FLOOD PLAIN INFORMATION
ANDROSCOGGIN RIVER
AUBURN - LEWISTON, MAINE

PLAN - PROFILE

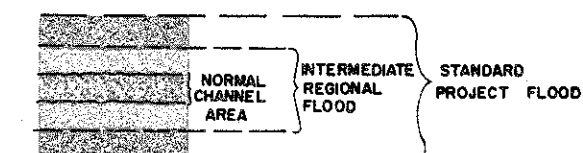
JULY, 1969

STA. 30.9 - M33

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.



LEGEND:



12 River Cross - Section

NOTES:

Limits of Overflow Indicated may vary
some from Actual locations on Ground,
as Explained in the Report.

Elevations Refer to Mean Sea Level Datum
Contour Interval Equals Ten Feet.

Topography is Based on U.S.G.S. Maps and
Topographic Map of Auburn, Maine.

Dated: April, 1961.

WRIGHT, PIERCE, BARNES & WYMAN
ENGINEERS
TOPSHAM, MAINE

FLOOD PLAIN INFORMATION

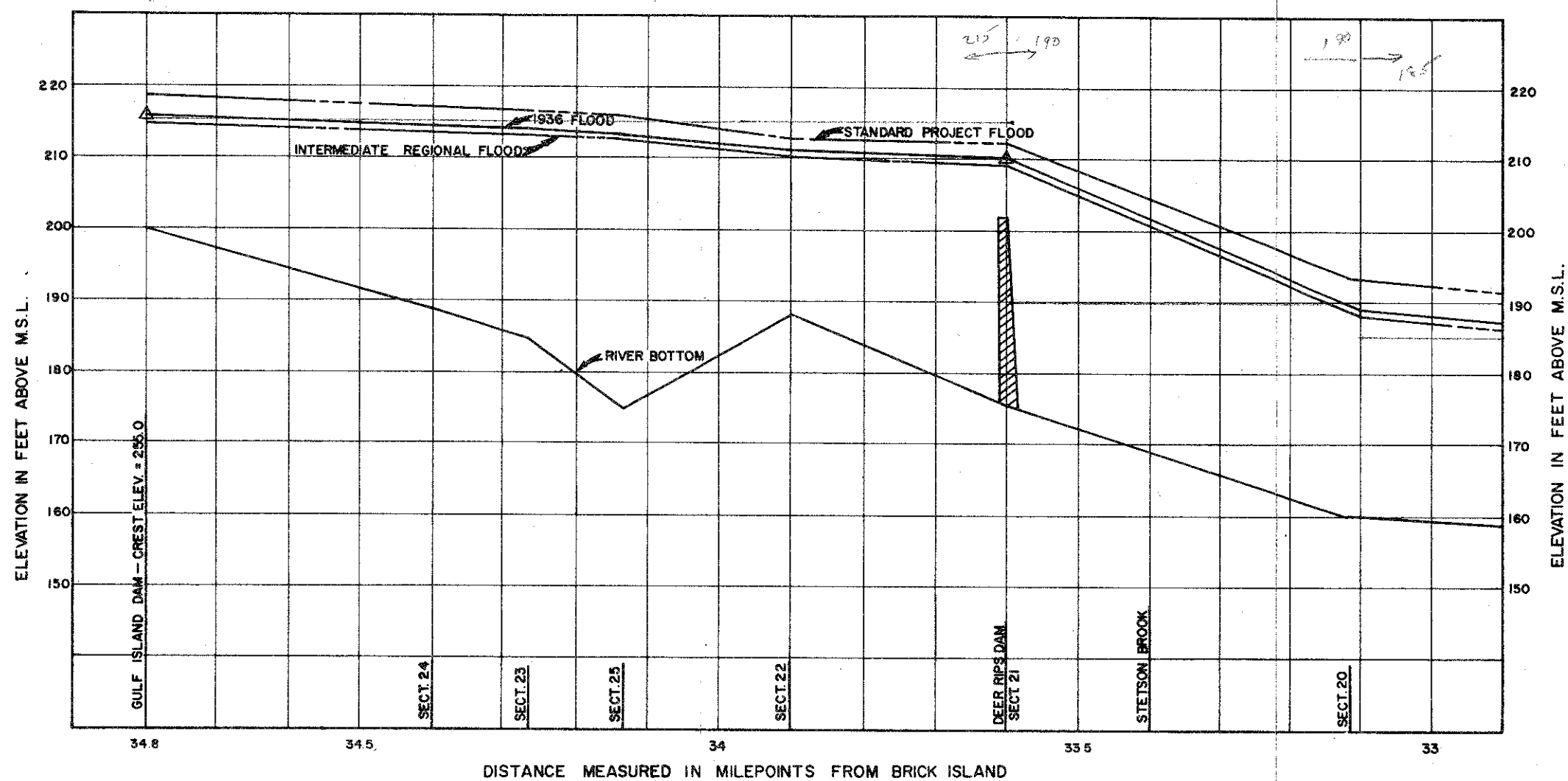
ANDROSCOGGIN RIVER
AUBURN—LEWISTON, MAINE

PLAN

JULY, 1969

STA. M33-M348

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.



LEGEND:



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ENGINEERS
TOPSHAM, MAINE

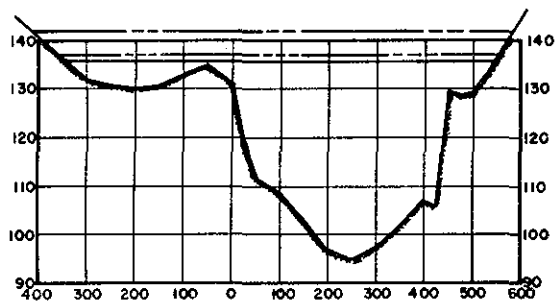
FLOOD PLAIN INFORMATION
ANDROSCOGGIN RIVER
AUBURN-LEWISTON, MAINE

PROFILE

JULY, 1969

STA. M33-M34.8

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.



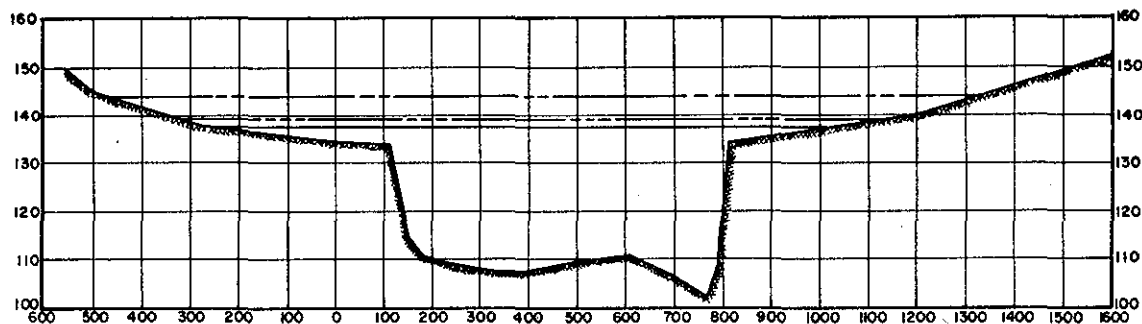
SECTION U.S.G.S. GAGE, MILE POINT 28.60

NOTES:

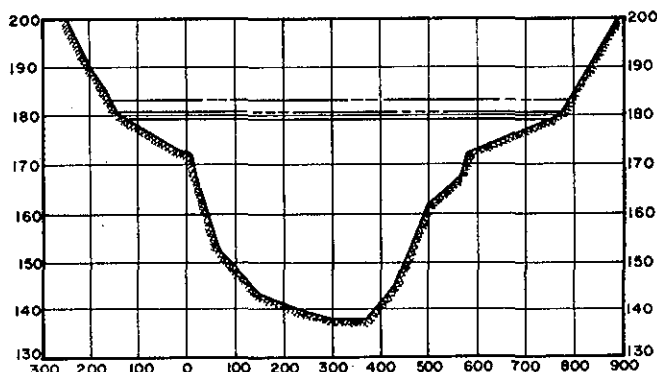
Sections taken looking upstream.
Horizontal distances in feet.
Elevations in feet (Mean Sea Level Datum)

LEGEND:

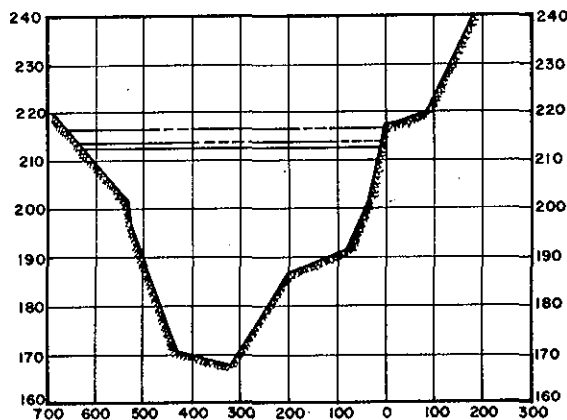
— STANDARD PROJECT FLOOD
- - - INTERMEDIATE REGIONAL FLOOD
... MARCH, 1936 FLOOD



SECTION NO. 7, MILE POINT 30.00



SECTION NO. 14, MILE POINT 31.50



SECTION NO. 25, MILE POINT 34.14

WRIGHT, PIERCE, BARNES & WYMAN
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TOPSHAM, MAINE

FLOOD PLAIN INFORMATION
ANDROSCOGGIN RIVER
AUBURN-LEWISTON, MAINE
TYPICAL CROSS SECTIONS

JULY, 1969

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
WALTHAM, MASS.

SECTION 3: ZONING DISTRICTS

- 3.1 The City of Auburn is hereby divided into zoning districts designated as follows:

FOREST & FARMING DISTRICTS

FLOOD PLAIN DISTRICT

RURAL RESIDENCE DISTRICTS

SUBURBAN RESIDENCE DISTRICTS

URBAN ONE FAMILY RESIDENCE DISTRICTS

URBAN GENERAL RESIDENCE DISTRICTS

NEIGHBORHOOD BUSINESS DISTRICTS

GENERAL BUSINESS DISTRICTS

INDUSTRIAL DISTRICTS

SECTION 4: BUILDING AND USES PERMITTED, APPLICATION OF REGULATIONS

- 4.01 In the zoning districts above specified and described, the following designated buildings and alterations and extensions thereof and buildings accessory thereto and the following designated uses of land, of buildings and of parts of land or buildings and uses accessory thereto are permitted. All other buildings and uses of land or of buildings are hereby expressly prohibited, except those already lawfully existing which by the operation of this provision would hereby become lawfully non-conforming. Trailers and mobile homes are specifically prohibited except in Mobile Home Courts or as residences for farm labor or management only on the farm where actually employed and only so long as so employed.

4.1 Uses Permitted in Flood Plain Districts

- 4.11 Any woodland, grassland, marshland, agricultural or horticultural use of land, but no building of any kind because of flood dangers except commercial building where adjacent to General Business Zones provided that:

- a. The density of structural materials shall be such that under high water conditions said materials shall not float in water;

- b. The contents, such as furniture, stock in trade or otherwise of said structure and appurtenant to the use thereof shall not constitute a threat to other structures under high water conditions;
- c. No filling material will be deposited on the lot or parcel in question which materials in any way would have an adverse effect upon the free passage of flood water;
- d. All other principles of the zoning ordinance, building code, and other ordinances and regulations are fulfilled, including but not limited to, loading areas, off-street parking, percentage of lot occupancy, setback limitations, all corresponding to the requirements in the zone indicated by the use intended;
- e. Such proposed construction will not be detrimental to the public health, safety, convenience and welfare.

4.12 In Flood Plain District the owners of property destroyed or damaged as indicated in 4.05c shall be permitted by the Board of Appeals to utilize his land for subsequent occupancy by a structure provided that the conditions "a" to "e" of Section 4.11 are fulfilled.

4.13 No alteration of the natural contour of the land by grading or filling for any purpose shall be allowed except for the purposes which can be considered approved soil conservation measures.

4.14 Residence buildings with the same provisions and restrictions as Section 4.3 hereof shall be permitted until Dec. 1, 1961, only on lots in unchanged ownership from Sept. 15, 1960 to Dec. 1, 1961, as a period of grace but thereafter shall be prohibited.

March 4, 1968

EXECUTIVE ORDER

by the

Governor of Maine

EVALUATION OF FLOOD HAZARD IN LOCATING STATE OWNED, STATE INSURED,
AND STATE APPROVED PUBLIC IMPROVEMENTS AND OTHER FACILITIES

- WHEREAS, uneconomic uses of the State's flood plains are occurring and potential flood losses are increasing despite substantial efforts to control floods; and
- WHEREAS, the State Government has extensive and continuing programs for the construction of buildings, roads and other facilities and provides financial incentives to private development of similar facilities, all of which activities significantly influence patterns of commercial, residential, and industrial development; and
- WHEREAS, the availability of Federal and State loans and mortgage insurance and land use planning programs are determining factors in the utilization of lands; and
- WHEREAS, similar action has been taken at the National level affecting Federal expenditures;

Now, THEREFORE, by virtue of the authority vested in me as Governor of Maine,
IT IS HEREBY ORDERED as follows:

The heads of Executive agencies, departments, commissions, shall provide leadership in encouraging a broad and unified effort to prevent the uneconomic uses and development of the State's flood plains and, in particular, to lessen the risk of flood losses in connection with State-owned lands and installations and State insured or State-approved or supported improvements, specifically:

- 1) All Executive agencies directly responsible for the construction of State buildings, structures, roads, or other facilities shall evaluate flood hazards when planning the location of new facilities and, as far as practicable, shall preclude the uneconomic, hazardous, or unnecessary use of flood plains in connection with such facilities.
- 2) All Executive agencies responsible for the administration of State grants, loans, mortgage insurance or other State-approved financing involving the construction of buildings, structures, roads, or other facilities, shall evaluate

EXHIBIT II

flood hazards in connection with such facilities and, in order to minimize the exposure of facilities to potential flood damage and the need for future State expenditures for flood protection and flood disaster relief, shall, as far as practicable, preclude the uneconomic, hazardous, or unnecessary use of flood plains in such connection.

- 3) All Executive agencies responsible for programs which entail land use planning shall take flood hazards into account when evaluating plans and shall encourage land uses appropriate to the degree of hazard involved.

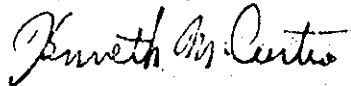
As may be permitted by law, the head of each Executive agency shall issue appropriate rules and regulations to govern the carrying out of this Order

Any request for appropriations for State construction transmitted to the Bureau of Public Improvements shall be accompanied by a statement by the head of the agency on the findings of his agency's evaluation and consideration of flood hazards in the development of such requests.

Technical evaluations of flood hazard can be obtained from the U. S. Army Corps of Engineers, the Federal agency assigned flood plain management responsibilities. The State Soil and Water Conservation Committee is hereby designated to coordinate requests for flood hazard information from the U. S. Army Corps of Engineers.

As used in this Order, the term, "Executive agency", includes any department, commission, committee, board, authority or other organizational entity of State Government.

Respectfully,



Kenneth M. Curtis
Governor